

Deviant Logic Part 2: fate, time, and the law of excluded middle

I look upon logical proofs the way a well-bred girl looks upon a love letter.

—J. G. Hamann

(friend and critic of Immanuel Kant)

Some, if not all, of the following are commonly held beliefs:

1. Something like free will or, alternatively, causal determinism is true.
2. Regarding a statement about a future event: either it will come to pass as described in the statement or it won't.
3. Whatever may be the case about the future, we can be assured (or regretful) that the past cannot be altered.

Can all these statements be the case at the same time? There are problems with saying they can be. Certainly, we can adjust our notions of what matters when it comes to the permissibility of taking responsibility for our actions, or what the nature of time is, or what it means for a proposition to be neither true nor false. We could adjust all these to fit well together but then other issues crop up to fray our intuitions about what we can be firm about. In the end, we will try to show, it is a game of whack-a-mole. Fix a problem here only to see another perhaps equally formidable one arise nearby. Are these other problems as bad as the ones near at hand we apparently solve? Depends on what set of “faith-based” axioms strike you as most potent. And all of them are “faith-based” in the sense that you cannot appeal to a still higher, more authoritative principle to evaluate them. These *are* the higher authorities.

The particular authority in question and main subject of focus on this occasion is one of the basic laws of logic, the law of excluded middle (LEM). It is implicated in a kind of fatalism, which together with one major theory of time, the block theory or eternalism, puts *both* free will and physical determinism (aka “hard determinism”) on the defensive.

The logical law of excluded middle (LEM) is a claim about disjunctive statement forms like this: p or not- p . The law demands these statements are always true regardless of what proposition p

may stand for.¹ If p stands for “Osmo is bald,”² then “ $p \vee \sim p$ ” would stand for “Osmo is bald or Osmo is not bald.” In a world where being bald or not bald are exclusive states of affairs, then Osmo must be one or the other. But in the real world—chock full of non-exclusive states of affairs where—nearly all predicates said about subjects are open to vagueness, it may well be the case that $p \vee \sim p$ is neither true nor false. Baldness, in fact, is a case in point. Exactly how many hairs must you be missing to be bald? Or how many possessed to *not* be bald? The disjunction about baldness escapes the threat of necessity imposed by the LEM purely by dint of being vague. Vagueness is its salvation. As long as a predicate is vague, we can luxuriate in the freedom to think something is not forced to instantiate having it or not.

The LEM is about statements, it is important to note. It is a structure imposed on sentential content. Nothing capable of accepting that structure escapes this law. The related principle of bivalence (PB), on the other hand, is about semantics, about predicate³ meanings in general that may instantiate pure logical forms (that is, conform to the LEM), or they may not: depends on the predicate. Some predicates may escape this principle. To be neither bald nor not bald is permissible because baldness is vague. Were it precise, like say “even” or “not even” used of counting numbers, then it would violate the LEM (as well as the PB) for it to be uncertain whether someone was bald even with all the information about the number of hairs on their head available. But baldness is not a precise concept.

So it comes down to whether a predicate attributed to something is vague whether the necessity imposed by the LEM is escaped. But are there *non-vague* predicates? Natural ones? Ones we did not make up to serve some specifiable purpose? It is not wholly clear that there are. To claim otherwise is to do some heavy metaphysical lifting. Truth be told—rumor has it—“truth” itself is one such non-vague predicate.

We can say, for instance, that it would be meaningless to assert that something is *both true and not true*, or even false to say so, as the law of non-contradiction (LNC) insists. Or that it is meaningless or false to insist that “ $p \vee \sim p$ is false”: that is to say, that a proposition may be *neither true nor false*. The LEM implies precisely that; it says that it must be one or the other. (For most practical purposes, what the LEM and PB claim is the same.)

Truth is not usually, unlike baldness, *allowed* to be vague. Allowed by what? By definition?

1. **Principle of Bivalence (PB):** A proposition is either true or false. **Law of the Excluded Middle (LEM):** Either a proposition is true or its negation is true = $P \vee \sim P$. The PB excludes the possibility of other truth values, such as “indeterminate” or “mixed” or “both” or “neither.” While the LEM is mum on that point; it merely says that any given proposition is either true or its denial is true but leaves open the possibility that the proposition may, *in addition to being true or its denial true*, be something else as well.

2. I borrow the name “Osmo” from Richard Taylor’s now classic little story about [fatalism and the LEM](#). An animated video short at [youtube](#).

3. One thing said about another thing: in the statements “the table is brown,” “I am here,” and “you are thinking” the predicates are “is brown,” “is here,” and “is thinking.” This is almost but not the same as a predicate in grammar, “predicate” as used here is concerned with meaning not syntax.

And that is what gets us into logical trouble—or trouble of some sort, at least. If the predicate “truth” is not vague, then it is precise, right? (Assuming what it means to be “precise” is not also vague!) Well then, consider a proposition/statement (or whatever you take capable of bearing a truth value⁴) like this:

Osmo will die in a plane crash tomorrow.

It is either true or not true that he will die in a plane crash tomorrow. There is no claim that anybody *knows* the truth about what will happen to Osmo, only that the statement about his dying is *either* true *or* it is false. It is true *now* that he *will* die as described apart from whether anyone can know *now*—if he, in fact, is going to die that way.

If it is true that Osmo will die in a plane crash tomorrow, then there is nothing Osmo or anyone else can do about it. Osmo will die so.

Whoa! This bit of reasoning sounds alarming. Have we gone too far? We back up a few steps to show how we might arrive at this (apparently) dire conclusion: here’s the argument:

1. Either it is true that Osmo will die in a plane crash tomorrow or it is not true Osmo will die in a plane crash tomorrow. (LEM/PB)
2. Suppose it is true. (Assumption)
3. Then whatever the conditions (if any) leading up to his death are, they are entailed by his dying so. They are necessitated by the fact of his so dying. If he dies, they too are bound to happen as they do. (This whole argument could be repeated for each of these pre-conditions one by one.)⁵
4. Suppose it is *not* true. (Assumption)
5. Then whatever prevents his dying in a plane crash entails about the conditions leading up to his survival are (if any), they are necessitated by the fact of his survival. If he doesn’t die, the pre-conditions too are bound to happen as they do. (This whole argument could be repeated for these pre-conditions as well.)
6. Whatever Osmo in fact does will conduce to his fate whatever that fate might be. (duh⁶ or [Ganto’s Axe](#))
7. Hence, Osmo has no free will—if by this we mean it is *within his power* to do something

4. A chair can be brown or sturdy, but it cannot be “true” or “false.” Utterances or texts, as objects (as noises or markings) can be lots of things but, likewise, not true or false. Their semantic content, their meaning might be, however.

5 Sam Harris, for one, is quite [confused about fatalism](#). Fatalism says nothing about what you *should* do or what you can *bring* yourself to do—whatever that means. It addresses simply what you *will* do, pure and simple. Everything necessary for what is going to happen is going to happen, too. If your fate makes it necessary for you to make the choices you do, then you will make those choices.

6. “Duh” in some usages appears to behave like a law of logic—though not any particular one.

now to prevent something that *will* come to pass from coming to pass. (If we mean something else than this by “free will,” then we have our work cut out trying to make this alternative understanding of free will interesting or useful.⁷)

8. Moreover—and this may come as a surprise to many, not only is Osmo powerless to prevent his fate, whatever it is, from coming to pass, but no one else—or *thing*—is either.⁸ Not even all the agents in the universe with their combined powers put together. Not even Nature and all its physical laws in cahoots with the above can effect the prevention of what is going to happen from happening. Not even God can help—assuming God exists and is bound by logic and has nothing better to do.⁹ Remember what is actually going to come about will necessitate whatever comes before it, assuming what comes before is actually a pre-condition. Agents, prior states of the universe, natural laws, God—all the above, separately or jointly—makes no difference. [*Que sera sera*](#).

This is logical fatalism, the most virulent form of determinism. If so-called “hard-determinism” or causal determinism, the kind that appeals to physical laws, is rock hard, then logical determinism is hard enough to turn rock to powder.

Causal laws have their roots in our psychological propensity to be [operantly conditioned](#), as Skinner might have put it, by our environment. We take our cues from observed patterns. The logic that arises from these patterns is called inductive logic. Pavlov’s dog logic. We take hints. We would not have survived as well if we didn’t.¹⁰

The trouble with survival is that survival is *always* a thing of the past. Tomorrow is a new day. With new possibilities for non-survival. Tomorrow may be a day just like today. Or maybe not. Maybe it will be our last one. Whatever—if certain very popular ways of understanding propositions about future events are correct, we don’t have any serious business pretending to have convictions about altering them... And nature is not in a position to help us either.

What is wrong with this argument for fatalism?

We don’t have to tolerate the fatalist conclusion. We always have the option to question one of its assumptions. Two likely suspects:

1. the Law of Excluded Middle—it may not exclude like it claims to, and

⁷ Some have tried. Some people think that so long as no external force is noticeably forcing your hand you are free. No one is talking here about “external or internal,” or “forcing your hand.” The subject is what *will* happen, not the mechanism of its occurrence or how you feel about it.

⁸ In case it is not clear, Osmo is *also* powerless to bring about what actually *will* happen.

⁹ If God can bend the laws of logic, all bets are off. Our goose is cooked as far as doing philosophy is concerned if so.

¹⁰ The laws of logic, on the other hand, claim to underwrite the very possibility of thinking, or thinking straight, at least. Supposedly, the laws of deductive logic are conceptually prior to induction. It is easier to think we might have been conditioned otherwise than that what will be will *not* be.

2. the view of time the argument assumes—does time “store” truths or are they made up as we go along?

Time and the LEM

We have [discussed](#) the Law of Non-contradiction and its problems. What about that other hallowed law of western logic? The one that says that a statement must be either true or false, that no way on earth can it be neither. The LNC insists it can't be *both* true and false. While the LEM says it *must* be one or the other, true *or* false. Between these two laws we seem to be cornered into taking a stand: every possible statement must be either true or false and it cannot be both or neither.

The law of excluded middle insists that where p is any proposition, p is either true or p is false. This applies to any well-formed proposition, one that isn't nonsense. It applies to *all* of them regardless to their position in time. It applies equally to:

It rained yesterday.

It is raining now.

It will rain tomorrow.

Of the first two statements, we may claim to know their truth value. Of the third we may not know. Nevertheless, under one theory of time the third statement, the one about the future, *does* have a truth value. We may just not know it. We *may well* know it tomorrow. But whatever our knowledge capabilities, there *is* a truth value assigned to the statement about what happens tomorrow according to the usual acceptance of the LEM and a common understanding of time, the block theory or eternalism.

The Block Theory of time

The *block theory* of time (we'll call it) might be described like this. Suppose events are like villages or locations along a train track. You are on the train. Those villages you have passed through are past events. Whatever village or place you are passing through now is the present. The ones still ahead on the itinerary are future events. You already have knowledge of the places you have been and are. You are on the way to experiencing the places farther up the tracks. When you arrive there you will be able to say you are acquainted with them as well. But not yet. You haven't arrived there yet. You take it for granted that the places you are still to visit are as real as the ones you have visited. *There will be—it is true now—something it is like to experience them.* Fun or boring or so-so—whatever experiencing them will be like you can't say just yet, but there most definitely will be something it is like to be there when you get there. There not only

will be—there *is now*—a “there there.”¹¹ There is some truth about these still-to-come experiences. You know that much *now* even *before* you arrive and *before* you are in a position to know the truth value. You take this for granted. The truth about the future is patiently waiting for you to experience it. If your experience of time is like you moving along these tracks, then there are true statements about the future existing *now* just like there are, for you on the train, villages and places existing *now* you are not acquainted with.

One more thing: you can’t stop or get off the train.

The block theory of time coupled with the LEM assures fatalism.

Must we accept the Block Theory of time?

But under other important theories of time, such as *presentism* and “*growing block*” theory, the third statement, the one about it raining tomorrow, the one about the future, does *not* have a truth value *until* someone can say they know it. To pursue the train analogy, the tracks and the scenery are being cobbled together as the train moves along.¹² The itinerary is not hard and fast. Moreover, if you are a presentist, the older the tracks, the more messed with and unreliable the tracks and their environs may get. The past is not set in stone. Or, if it is, recall: stone erodes.

Statements *become* true (or false) only as they pass into the knowledge store of some knowledge-capable entity—like, say, us, today. Under these theories there is no truth about the future until it gets here. And “here” means a moment that can be called “present” or “past” to some knowledge-capable being existing in time.

Presentism goes a bit further than “growing block” theory. It is the view that *only* the present has reality—that means that only *the present moment* houses truth values in all their glory. Truth values are meaningful now—and *only* now. By contrast, “growing block” theory adds the past to the mix of what is real and meaningful and in which truth values can thrive. Truth is gaining territory all the time, according to that theory.

But as to the future, under both presentism and growing block theories, it is pointless to speak of the future and truth in the same sentence. Under both of these theories, a meaningful notion of time is dependent on a special kind of knowledge-capable entity. One like us. Absent us or beings like us, and there is no truth to be had about the future. Period. Everybody agrees that we can know whether or not something is true now. The growing block theorists are fine with past truths. While the presentist suspects the past of slipping away into an obscurity like that which

11 As Gertrude Stein used to say was *not* true about Oakland, California.

12. Actually, modern tunnel boring machines work something like this and perhaps would make a better analogy. They dig and line tunnels, then lay tracks as they go. “Bertha,” such a machine, is digging a worm-hole with tracks this way in Seattle as I write. Unplanned things, like getting stuck, can happen.

currently (and thoroughly) engulfs the future.

So then, if you are a growing block theorist or presentist, you believe statements about future states of affairs (referents of statements uttered now) are waiting in line to be assigned their truth values. “It will rain tomorrow” has no truth value and will never have it until it becomes possible to say “it is raining.” But when that time comes, “it will rain tomorrow” will no longer refer to what it does now. So whatever state of affairs “it will rain tomorrow” refers to, the statement “it will rain tomorrow” is never in a position to be true or false. Statements about the future are forever locked out of truth value participation. For our purposes, “growing block” and presentist theories both may be called *truth-as an-acquired-trait* theories—except that presentism allows for the degradation of truth value as well.

These will not be subject to the fatalism problem we discuss here.

“Growing block” and presentist views of time are not implicated in the fatalism conspiracy. Acquired-truth time theories will have other serious problems, certainly, but not the one that sends us careening into despair at our fate. Nevertheless, keep these theories in mind. You may like them after we shake down their more popular competitor, the block theory.

The “truth-in-waiting” theories of time

The block theory—call it the *truth-in-waiting* theory—strikes many as more commonsensical.¹³ After all, it does seem plausible that “it will rain tomorrow” is a statement about a future state of affairs that is, one or the other, true or false *now*, and it’s just a matter of time before we’ll be in a position to know it. That is to say, there is a truth value existing *now* about a future statement—any and all of future statements, to be exact. We may not know the truth values—may never, but they do exist somewhere—in “truth-space,” wherever that is. “Truth-space” is the waiting room where future truth-making events are lined up, like accidents, just waiting to happen—very confident accidents.

Perhaps the thinking behind the plausibility of the block theory goes something like this: there is a truth value associated with the statement “there has existed, at some time or other, at least one tree in a forest on earth that has never been observed by any living human at any time.” And now the event of that tree’s existence has come and gone. It left no record of itself. Nevertheless, we want to say there is a truth value assigned to the statement that *that* tree *did* exist even if the truth of the statement or anything to corroborate it is *never* remarked on by anyone.

Supposed we had never evolved (devolved?... whatever) wouldn’t it be possible for there to be a true statement about the dinosaurs existing, assuming they did? Just no one around to know it?

13. Perhaps “commonsensical” here really means: in accord with the traditional laws of logic, which we, of course, are raising questions about.

Believers in an omniscient being, of course, come equipped with a repository for knowledge of this sort. This know-it-all being would know these things, would know the truth value of every statement one might formulate along with, supposedly, the unformulable others, too. The mind of this know-it-all would house the requisite entirety of “truth-space.”

But the knowledge in all the libraries in the world doesn’t require the libraries’ collective existence to be knowledge, right? Maybe the universe itself is the library of all possible knowledge. The language knowledge is written in has no bearing on its being knowledge, right? Nor the medium, nor the location, nor even its place in time? We know there will be true statements about the future. How do we know? Look at the past, it is a record of once future statements breaking true or breaking false. Food in the fridge is either eaten or goes bad and thrown out. But it is there, in the meantime, waiting for its fated eventuality.

If a statement is now known to be true, then, according to the block theory, if we had said in the past that it *would* be true we would have been speaking correctly. There is no reason for us to believe that truths spring into existence the instant we come to know them. *If they are true now, they were always going to be true, which means they were true before we came to know them.*

And truth and falsity once applied to a statement cannot be undone by time. That much is relatively uncontroversial: *two of the three* theories agree about this. No one, except a presentist, thinks that what is true today can be made untrue tomorrow.¹⁴

It does not make sense to say, then, that some statement was once true but is now false.¹⁵ A new statement may well be false but not the one that was formerly true. So if it is true that it rained yesterday, nothing about what it is doing now or at any time in the future can make that statement false. If it is true that it rained yesterday, it is true now. The statement that it would rain yesterday, said the day before yesterday, was true. It was true when it was said. And all times when it could be said.

A statement that is true can never be made false. One false can never be made true.

Enter the law of excluded middle and probability

The law of excluded middle taken together with the block view of time—the truth-in-waiting

14. Time travel, for a presentist, is incoherent. There is no “there there” to travel to. We are mistakenly thinking space can be an analog for time, and, as such, a medium in which “travel” is possible. “Travel” is a concept endemic to space. We get carried away by a metaphor to think otherwise.

15. Suppose I say “I used to live in Texas, but I don’t now.” Have I altered the truth of “I used to live in Texas”? No. I have altered the truth regarding where I live now, not where I used to live. I have altered a state of affairs not the truth of a statement about a state of affairs. Unless, of course, you are a presentist and believe truth has a shelf life and can go bad.

view of time—make for a potent mix leading to fatalism. Every one of those possible statements in the waiting room is either true or false *already*. Because *every* well-formed statement is. But the LEM and this view of time also makes statements of probability comfortable. If I say something will *probably* be true tomorrow, this is usually understood to mean truth or falsity attach to the future statement. But *which* of these two truth values it is that attaches, I can only estimate in light of past and present evidence.¹⁶ Supposedly, we only speak of probability because of epistemological limitations. *But if truth values didn't attach to future statements at all, wouldn't we be spinning our wheels talking about probabilities?* Then we would seem to be expressing something about our psychology, not about events external to us. That is not, I think, what people mean to be doing when they make predictions with probabilities.

The epistemological limitation of probabilities is, in principle, temporary. It exists because we don't now have enough evidence to strengthen our probabilities to the limit which, of course, would be reached when we no longer have to rely on probabilities at all because we have attained certainty, that is to say, "knowledge" of the truth value of the proposition we were earlier speculating about. But a psychological limitation wouldn't be. It would be constitutional of beings like us. In this latter case, that we entertain probabilities is a feature of our evolutionary history like every other characteristic of our nature. We think in probabilities of future events like we digest the foods we do. It is a highly contingent feature. Needless to say, this conflicts with much that we think we know about the world around us.

The LEM says that every properly formed or meaningful statement is either true or it is false. We just argued that every statement without exception—even those about future states—have a fixed truth value—on the assumption of the very popular block theory of time, of course.

So, if it's true that there will be a meetup about this topic, there will be a meetup about this topic. If, for whatever reasons, it never happens, it will be false—is *false now*, as I write—that it will happen.

If you like this popular view of time and you insist on the LEM, then you must be a fatalist. *Not once in the entire history of the universe has a statement that was true been turned into a false one by me, you, God, nature, anyone or anything.* Even God must play by this rule, the medievals used to say.

No, this can't be! I am lord and creator of my future!

Suppose fatalism is fatally unattractive to you. Nothing is more sure than that at least *some* events in the future are not already decided now by anyone or anything. So much of our daily business and goings-on-about and their attendant deliberations are premised on this possibility. If

16. Along with a host of assumptions or baggage comprised in inductive reasoning: the principle of the uniformity of nature, the contingency of our psychology, etc.

the LEM and the truth-in-waiting view of time, together, preclude this possibility, so much the worse for them: at least one of these ideas has to go. Either statements about the future can be indeterminate, that is, *neither* true nor false, or time works differently. If we are apt to fall off a bridge, we have to wait for it to be available; we cannot accept now that it is already true or false that we will fall off of it. Or time is not a container of truths (or their corresponding events) waiting to be witnessed by us. Time then would be, so to speak, “a work in progress.”

What to do?

Ditch your view of time: become a presentist or growing block theorist, and say goodbye to meaningful talk of probability. Such talk is symptomatic of our psychology. I mean we can talk about it all we want and we can prepare for what we feel is likely because it makes us feel better, but as to what *will* happen... we'll just have to wait and see about that. It's all undecidable, so there is nothing to be probabilistic about. Curiously though, its being *undecided* doesn't automatically mean we have any say either. There is a *room* for it. Seems. We like to think...

Ditch the LEM: You have this option if you don't like the one above: the part about forcing the choice between seeing statements as true or as false and nothing else. Perhaps there is *another* option? The Polish logician [Łukasiewicz](#) suggested this... but how does this help with whatever it is we are afraid of? To be told the future is undetermined? Is that what we want? I think we want to determine it. Consider the case of indeterminism, the thesis that nothing causes anything to happen, entailing that causes are as illusory as free will. To be told the future is open but we will have no say in how it is closed, does what for us? What kind of entity do we take ourselves to be that we can be so assertive? Whatever kind that is, we can insist on it. And logic and time will have to wrap around our requirements. After all...

Where do the laws of logic get their authority?

Are we asking questions against a background of the logic of “discovery” or “invention”? In the case of the laws of logic, we don't normally think of them as *discovered* in the way the molecular structure of water was or *invented* in the way the wheel was. But then where the hell...?

The problem with suggesting logical laws were *invented* is that it sounds heretical, a bit like Voltaire saying that if God hadn't existed, we would have invented him. Voltaire was famously not respectful of the divine. I guess we don't trust our imagination enough to *invent* truths and have them *be* true in virtue of our having invented them.

But saying we *discovered* laws of logic is just as disturbing. Because if they were there hanging out waiting to be discovered, if they pre-exist our inquiry into them, then we would expect them to be or have been *universally* discovered or discoverable. We—*all of us*, not merely those with

our cultural heritage—should have landed in the same place with regard to them, right? All who inquire after them should *converge* on the same fundamental set of laws—at least in the fullness of time. The convergence should have happened long ago. It's not like we require special technology to discover them—our technology wouldn't be possible without them! *The laws should at least be ahistorical and culturally non-contingent.*

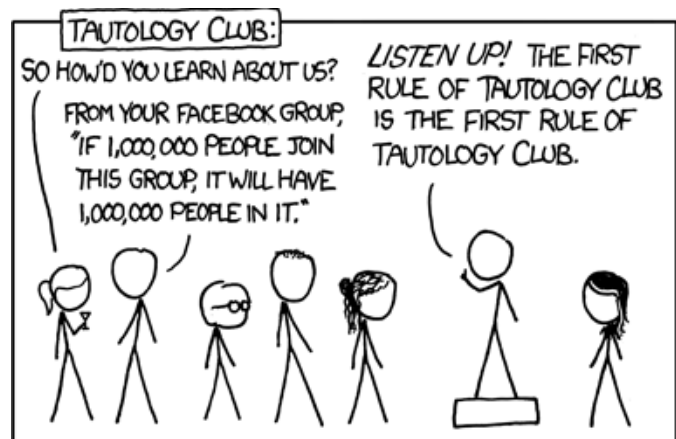
But there is, in fact, a kind of small smorgasbord of logical laws. We don't need to go so far as to say that Eastern and Western logics are totally at odds or the variety of laws vast. Still, only a subset are necessary to the function of any one cultural mindset. And some of the laws reject others in the larger set. When one law rejects another, which trumps? Or is logic manifestly unreasonable? Logic unreasonable?!! The laws do not seem very friendly to our proclivities—maybe that is their point?

The law of identity, for example—that everything in the universe is identical with itself, seems *at once* beyond dispute *and* stupid to assert, a monumntal platitude. The law of non-contradiction warns of catastrophe if *even one* contradiction in the universe is true (and the fear is there are many candidates that are if you care to look). If a contradiction is true then all statements are true. It's called “explosion” and as absurd as logic gets. And now the law of the excluded middle threatens to make puppets of us all!

Inventions, in contrast, we can easily imagine may follow upon the contingent needs and environments of inventors. Water does not have a different molecular structure according to whether the chemist is Asian or European. Conceptions of laws as basic as the law of non-contradiction or the law of excluded middle—if they differ at all among those who seek them—*should* converge...

But they don't—

Or any evidence for believing they do is a lot flimsier than many of us have been led to assume. It's just not crystal clear in the way that logic itself has conditioned us to believe things are. The evidence suggests cultural insularity has a lot to do with the basic ruts of thought we fall into. If you want to say that our laws of logic must be correct or more correct than any others we can imagine because they have *worked*, many systems of such laws work. If you want to say ours have worked *better*, you have to say by what measure. If you say that, why isn't *that* measure itself universal? If you want to say it *is* universal but not everyone has realized it, back to why is that? Are you saying some of us are just idiots and you are among the lucky ones who are not? Well, maybe... but



how can you be sure the roles aren't reversed?

There has always been such a thing as *militant neutrality* on any forced issue. Not all contradictions are unbelievable—to believable people, for example. We forget. There is a case to be made that the LNC, the LEM, the law of identity, and by extension the rest of non-basic logical infrastructure constructed upon these “laws” insofar as they claim canonical authority on matters of rational argument is a load of hooey. To say that it has worked is no defence. Lots of things work. Everything works. Or it doesn't. Lot of things don't work. You just have to be more precise and ask *what for*.

Some logical norms, like ethical ones, do converge, sort of, vaguely... but I think some of us were hoping for more. Just when we need them most, when we need them to settle ultimate disputes once and for all, they get soft on us. We wanted laws that could be trumpeted. We seem to get rules of thumb at best.

Resources

On fatalism:

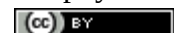
- Chapter on [Fatalism](#) from Richard Taylor's *Metaphysics*, 4th Ed.
- [The Story of Osmo](#) (animated video short):

On time:

- The [IEP entry on time](#) by Bradley Dowden is a nice introduction.
- See also the [SEP entry on time](#) by Ned Markosian.
- PhilosophyBites podcast interview with Hugh Mellor on the [tenseless time](#).
- D. H. Mellor and J. R. Lucas on “[Transcendental Tense](#)”

—Victor Muñoz
January 2016
Seattle

the ?philosophy club



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